the first one. Herr von Schweiger-Lerchenfeld describe Rohlfs' journeys in 1862 and 1864, the Oases of Tafilet and Boanan, the Draa district, the extreme south-western coast districts, the Wadi Sus valley, the journeys from Ktaua to the southern frontier, and from Tafilet to Igli, the Saura river, Beni Abbes and Karsas, the journey to the oasis of Tuat, In Salah, and numerous other subjects of geographical interest. His descriptions are graphic and full.

NEWS of the Danish Arctic Expedition has been received at Copenhagen, Tuesday night, up to September 22. The Expedition was then ice-bound near Mistni Island; but it was confidently hoped that the vessel would get free, and in any case there appeared then to be no danger.

AT its last sitting, the Geographical Society of Hamburg resolved to despatch a new expedition into the centre of East Africa. Its chief will be Dr. Fischer, who was one of Denhardt's companions in 1872, and remained behind at Zanzibar when his leader returned home. Dr. Fischer applied this summer to the Hamburg Geographical Society for means to enable him to cross the Snow Mountains, and then penetrate to the north of the Gallas regions, and as the enterprise seemed likely to favour the development of certain branches of the Hamburg trade, a sum of 15,200 marks was immediately subscribed for its furtherance.

THE "Thüringisch-Sächsidsche Verein für Erdkunde" held a general meeting at Kösen on October 1. Prof. Brauns (Halle) spoke on his travels in the mountain districts of Southern Japan; Dr. Nicolai (Jena) on the land and people between the Ruhr and the Wupper; Dr. Assmann (Magdeburg) on meteorological observations made on the summit of the Brocken.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE

OXFORD.—Although the new Statutes have come into force, regulating the courses given by the various teachers of science, and bringing the college tutors more or less under the control of the central authority of the Science Board, as yet no steps have been taken to form any of the new Boards of Faculties, and for this term at least lecturers only consult their own convenience and the wants of their particular pupils. In the Physical Department of the Museum, Prof. Clifton gives a course on "The Electricity developed when Different Substances are in Contact with one another;" Prof. Price gives a course on Optics; Mr. Stocker a course on Elementary Mechanics; and Mr. Heaton will form a class for the study of problems in elementary mechanics and physics.

At Christ Church Mr. Baynes gives a course of lectures on Electrical Testing, to be followed by a course of practical instruction in electrical and magnetic measurements.

At Balliol Mr. Dixon gives a course of lectures on Elementary Physics.

In the Chemical Department of the Museum Prof. Odling gives a course of lectures on Cyanogen and its Compounds. Mr. Fisher lectures on Inorganic, and Dr. Watts on Organic Chemistry. Mr. F. D. Brown will form a class for practical instruction in Organic Chemistry.

At Christ Church, Mr. Vernon Harcourt lectures and forms a class for practical work in Quantitative Analysis.

In the Biological Department of the Museum, Prof. Moseley continues his course on Comparative Anatomy. Each lecture is followed by a practical course in illustration of the lecture.

Mr. S. J. Hickson will lecture on some recent improvements in histological methods, each lecture to be followed by practical instruction. Mr. Morgan gives a course on the Teeth of Vertebrata, and Mr. Barclay Thompson a course on the Vertebrate and Invertebrate Skeleton.

The Scholarship in Natural Science at Trinity College has been awarded to Mr. David H. Nagel, of St. Andrew's University; *proxime accessit*, Mr. H. T. O. Minty, of the Royal College of Science, Dublin. The following gentlemen have been named as distinguishing themselves in the examination:—Mr. J. Waddell, of Dalhousie College, Nova Scotia; Mr. F. L. Overend, of Manchester Grammar School; and Mr. T. H. J. Watts, of Llandovery School.

CAMBRIDGE.—To supply the place of a Demonstrator which the late Prof. Balfour had asked for, and to carry on his work during the current year, the Council of the Cambridge Senate have recommended that 300*l*. be placed at the disposal of the Board of Biological and Geological Studies for the year. Trinity College has appointed Mr. A. Sedgwick, who was lately Mr. Balfour's Demonstrator, and had the sole charge of the classes for two terms during Mr. Balfour's illness this year, to a lectureship for the current year, on conditions similar to those under which Mr. Balfour conducted his classes before his appointment to the professorship.

The following science lectures have been announced:—Professor Cayley, on the Abelian and Theta Functions; Professor Lewis, on Mineralogy and Crystallography; Mr. Muir, Caius College, on the Metals, and General Principles of Chemistry; Mr. Lea, on Chemical Physiology; Dr. Michael Foster, on Elementary Physiology; Mr. Langley, on Physiology and Histology, with practical work; these lectures will deal with protoplasm, the cell theory, theory of contraction, blood corpuscles, muscle, ciliated cells, nerve cells, endings of nerves, and the general physiology of nerve and muscle.

Mr. A. Sedgwick will give an elementary and an advanced course on the Invertebrata, with practical work. The advanced course will be given in conjunction with Mr. W. H. Caldwell, of Caius, College, and will extend over three terms.

Prof. Newton is lecturing on the Evidence of Evolution in the Animal Kingdom.

Prof. Humphry is lecturing on Osteology, and holds advanced classes in Anatomy and Physiology.

Messrs. A. G. Greenhill and R. R. Webb are appointed Moderators for the ensuing year.

Mr. W. N. Shaw (Emmanuel College) is appointed a member of the Board of Physics and Chemistry, and Messrs. A. Sedgwick and E. Hill are added to the Board of Biology and Geology.

Mr. R. Etheridge, F.R.S., and the Rev. E. Hill, are appointed adjudicators for the Sedgwick Prize.

The Medical Examiners for the year are, 1st M.B., Messrs. P. T. Main, W. Garnett, and S. H. Vines; 2nd M.B., Drs. Watney, Shuter, and A. M. Marshall; 3rd M.B., Drs. Reginald Thompson, Galabin, and Handfield Jones. Examiners in Surgery, Messrs. Luther, Holden, and T. Brayant; Assessor to the Regius Professor of Physic, Dr. Cheadle.

Messrs. R. S. Heath, Second Wrangler 1881, and A. E. Steinthal, Third Wrangler 1881, have been elected to Fellowships at Trinity College.

SCIENTIFIC SERIALS

Zeitschrift für wissenschaftliche Zoologie. Bd. 37, Heft i., August, 1882, contains:—On the development of *Asterina gibbosa*, Forbes, by Prof. Dr. Hubert Ludwig (with woodcuts and plates 1 to 8).—On *Marginella glabella*, L., and on the Pseudo-marginellidæ, by Justus Carrière (plate 9).—On the lateral canal system in *Cottus gobio*, by Dr. E. Bodenstein (plate 10).—On the coloration of the nestlings of the genus Eclectus (Wagl.), with a list appended of seventy-one papers on this somewhat vexed question, by A. B. Meyer.

Verhandlungen der k.k. zool.-botan. Gesellschaft in Wien, Bd. xxxii. Pt. 1 (January to June, 1882), contains, in addition to the proceedings of the Society, the following memoirs:—Zoology. By Dr. R. Bergh, contribution to a knowledge of the Aeolididæ, vii. (plate i.-vi.).—Dr. F. Brauer, on *Sympycna paedisca*, a justification of this as a new species.—Dr. R. Drasche, a revision of the types of Diesing and Molin in the Nematode collection of the Society (plates 7 to 9).—On Oxycoryina, a new genus of Synascidian (plate 13).—Helminthological notes (plate 12).—Count Keyserling, on new American spiders (plate 15).—Dr. Löw, the characteristics of the genera Aphalara and Rhinocola (plate 11). A revision of the palæarctic Psyllidæ, and on a new species of coccus (*Xylococcus filiferus*) (plate 16).—A. v. Pelzeln, on the export of birds from Borneo.—A. Wimmer, on some adriatic shells.—Botany: Dr. G. Beck. New Austrian plants (plate 14).—W. Vos, material towards a list of the fungi of Krains.—Dr. F. Arnold, in memory of F. X. Freiherr v. Wulfen, born November 5, 1728, died March 16, 1805.

Revue internationale des Sciences biologiques, August 15, 1882, contains—On modern Hylozoism, by Jules Soury.—On the structure and the movement of protoplasm in vegetable cells, by H. Frommann (in continuation).—On psychology and the labours of Broca, by M. Zaborowski.

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Archives des Sciences Physiques et Naturelles, August 15.—On the rotatory polarisation of quartz (second part), by L. Soret and E. Sarasin.—Some new aromatic ketones obtained by molecular condensation, by A. Claparède.—On the quantity of hail that fell during the thunderstorms of August 21, 1881, and of July 13, 1788, and some words on the history of hail-preventers, by P. Dufour.

Gegenbaur's Morphologisches Jahrbuch, 8 Bd. Heft 1, 1882, contains:—Contributions to the morphology of the oral glands in vertebrates, by P. Reichel (plate 1)—On *Rhodope veranii*, Koll = *Sidonia elegans*, M. Schultze, by Prof. Dr. L. v. Graff (plate 2). This little animal, found on Ulva, at Trieste, belongs not to the Gastropods, as Kolliker thought, but to a section of the Rhabdocœla.—Notes on the calcareous skeleton in the Madrepores, by G. v. Koch (plate 3).—Contributions to the anatomy of the organs of vision in fish, by Dr. E. Berger (plates 4 and 5). Contains an account of researches made on one Cyclostomous nine Selachoid and nine Teleosteous fishes, and is accompanied by an account of the literature of the subject.

Niederländisches Archiv für Zoologie, Supplement Band 1, Lief. 3, 1882, contains a report on the sponges dredged up in the Arctic Sea by the *Willem Barents*, in the years 1878 and 1879, by Dr. G. C. J. Vosmaer, with four plates. Vosmaer differs from Sollas, though apparently without the same amount of material to judge from, regarding *Thenea muricata*, Bwk., as the same species as *Th. wallichi*. This very excellent memoir is written in good English, but as the sheets were not corrected for press by the author, several very perplexing mistakes occur, which are corrected in the appendix.—Report on the Echinoderms of the same expedition, by Dr. C. K. Hoffman, with one plate.—On the Nemertians of the expedition, by Dr. A. A. W. Hubrecht.—On the Gephyrea, by Dr. R. Horst, second portion, with two plates. *Stephanostoma barentsii* is described as a new species.—A catalogue of the Polyzoa, by D. W. J. Vigelius, with one plate.—On the Crustacea, by Dr. P. P. C. Hoek, with three plates.—List of the Mollusca, by Th. W. Van Lidth de Jeude; and list of the Birds, by Dr. H. Schlegel.

SOCIETIES AND ACADEMIES

LONDON

Entomological Society, October 4.—Mr. H. T. Stainton, president, in the chair.—Two new Members were elected.—Mr. R. McLachlan exhibited nymph-skins of *Hagenius brevistylus*, Selys (a dragon-fly occurring in Texas).—Mr. C. O. Waterhouse stated that the beetle exhibited at the August meeting as destructive to beer-casks at Rangoon was not *Xyleborus Saxesenii*, Ratz., but *Bostrichus perforans*, Woll. A discussion followed as to whether wood-feeding beetles attack healthy as well as unhealthy trees.—Papers read Prof. J. O. Westwood, Further descriptions of insects infesting figs.—Mr. G. C. Lewis, A supplementary note on the specific modfications of Japanese *Carabi*, and some observations on the mechanical action of sun-rays in relation to colour during the evolution of species.

PARIS

Academy of Sciences, October 9.—M. Blanchard in the chair.—M. Dumas communicated the results of the labours of the International Committee of Weights and Measures for 1882. The comparison of a new metre and kilogramme of iridised platinum with the old French standards of platinum proved very satisfactory (showing close similarity).—On a new theory of the sun, by Dr. C. W. Siemens, by M. Faye. He urges that gas rarefied to $\frac{1}{2000}$ would be, for the astronomer, a dense medium, presenting much greater resistance than is observed, to celestial movements. Moreover, the hypothesis adds 100000 times the mass of the sun, to those masses which celestial mechanics has hitherto reckoned so minutely.—On the shock of two spheres, having regard to their degree of elasticity, and to the friction developed on contact, by M. Ledieu. These chiefly apply to the prevalent notion of electromotive forces, (total or partial) and of currents.—Observations of the great comet (Cruls) at Marseilles Observatory, by M. Borrelly.—Theorems on the functions of an analytical point, by M. Appell.—On Fuchsian functions, by M. Poincaré.—On a series for developing the functions of a variable, by M. Halphen.—On the gravity-barometer, by M. Mascart. He made a rough trial of his instrument in a journey to the north of Norway. He finds that it is easily transportable, and that its precision is apparently not less than that obtained with the pendulum. One has merely to observe the mercury-level and the temperature, and the installation may be done in less than an hour in a hotel-room.—Transmission of work a great distance, on an ordinary telegraph-line, by M. Deprez. Between Miesbach and Munich (57 km.) he used two telegraph wires of galvanised iron 4·5 mm. thick. The total resistance of the circuit, including the two quite similar Gramme machines (each 470 ohms) was about 1900 ohms. In a first experiment, a work of 38 kgm. per second (or ½ a horse-power) was got directly at Munich with a velocity of 1500 turns a minute (the Miesbach machine giving 2200 turns). More than 60 per cent. of the work expended was recovered. Heavy rain fell all the time of the experiments. The receiving machine fed a cascade through a centrifugal pump. The heating after two hours was hardly appreciable.—Thermoscopic method for determination of the ohm, by M. Lippmann. This differs from Mr. Joule's calorimetric method in not requiring measurement of the quantities of heat, nor a knowledge of the mechanical equivalent of heat. After measuring the heat from passage of a current of known intensity through a wire in a calorimetric vessel, equal heat is developed by friction in the vessel, and from the work expended, and the intensity of the current, the electric resistance may be deduced.—On the rotatory polarisation of quartz, by MM. Soret and Sarasin. A new method is described, which yields results closely agreeing with those got before.—On experiments made to determine the compressibility of nitrogen gas, by M. Amagat. He notes important points of difference between M. Cailletet's method and his own (which some have affirmed to be quite similar), shows that the curves obtained are quite different, and contends for the greater accuracy of his own results.—On some combinations of bisulphide and biselenide of tin, by M. Ditte.—On the fermentation of nitrates, by MM. Gayon and Dupetit. Their experiments confirm the hypothesis that the reduction of nitrates, as well as nitrification, is a physiological phenomenon. Thus, in sewage water containing a little nitrate of potash, with some altered urine, the nitrate disappears gradually, and the liquid is filled with microscopic organisms. Chicken broth does better than sewage-water. (The presence of organic matters is necessary.) Carbolic acid and salicylic acid in antiseptic, or even higher doses, not only do not hinder the life of the reducing microbe, but themselves disappear completely with the nitrate.—Note on the transformation of amides into amines, by M. Baubigny.—On the decomposition of the tertiary acetate of amy by heat, by M. Menschutkin.—Observation of the aurora borealis of October 2, 1882, by M. Renou. Accounts of the phenomenon were received from the Park of Saint Maur, from Nantes, Evreux, and Cherbourg.—M. Maumené said that black phosphorus appears nearly always in the first drops of phosphorus which distil in a current of hydrogen (prepared from zinc and sulphuric acid). The following drops are colourless and destroy the colour of the first by liquefying them and mixing with them. CO_2 does not give the phenomenon.

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